UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R077XC056NM

Site Name: Sandy Plains

Precipitation or Climate Zone: 14 to 18 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on nearly level to gently undulating landscapes on upland plains. Slopes range from 0 to 5 percent but are usually less than 3 percent. Steeper microslopes may occur where wind blowing of unprotected surface soils has formed low hummocks around shrubs. Hummocks are less than two feet high. Direction of slope varies and is not significant. Elevation ranges from 3,550 to 4,300 feet above sea level.

Land Form:

1. Plain
2. Sheet sand
3.

Aspect:

1. N/A
2.
3.

	Minimum	Maximum
Elevation (feet)	3,350	4,300
Slope (percent)	0	5
Water Table Depth (inches)	N/A	N/A

Flooding:	**Minimum**	**Maximum**
Frequency	N/A	N/A
Duration	N/A	N/A

Ponding:	**Minimum**	**Maximum**
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

The climate of the area is "semi-arid continental".

The average annual precipitation ranges from 14 to 18 inches. Variations of 5 inches, more or less, are common. Approximately 85 percent of the precipitation falls from April through October. Most of the summer precipitation falls in the form of high intensity-short duration thunderstorms, often accompanied by hailstorms.

Distinct seasonal changes and large annual and diurnal temperature changes characterize temperatures. The average annual temperature is 58 to 61 degrees F with extremes of 30 degrees F below zero in the winter to 110 degrees F in the summer.

The average frost-free season is 190 to 210 days. The last killing frost being in early to mid-April and the first killing frost being in late October to early November.

Temperature and rainfall both favor warm-season perennial plant growth. Occasionally an early spring or late fall storm will occur from a prolonged front. This, along with occasional spring and fall showers, allows the cool-season component to occupy an important part of this plant community. The vegetation on this site can take advantage of the moisture at the time it falls. Because of the soil profile, little moisture can be stored for any length of time. Strong winds blow from February through May from the south, which rapidly dries out the soil during a period critical to cool-season plant growth.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	181	216
Freeze-free period (days):	203	238
Mean annual precipitation (inches):	14	18

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	0.37	0.45	22.0	56.6
February	0.35	0.49	25.8	62.0
March	0.44	0.68	31.5	69.0
April	0.62	1.05	39.6	77.0
May	1.67	2.10	49.4	85.5
June	1.89	2.63	58.4	92.8
July	2.15	2.75	62.1	93.6
August	2.41	2.95	60.7	91.9
September	1.88	2.63	53.9	85.9
October	1.31	1.73	42.6	77.1
November	0.51	0.57	30.5	65.3
December	0.42	0.60	23.1	58.1

Climate Stations:

				Period		
Station ID	291939	Location	Clovis, New Mexico	From: 11/24/10	To:	12/31/01
Station ID	292207	Location	Crossroads #2, New Mexico	From: 07/01/29	To:	05/31/01
Station ID	292854	Location	Elida, New Mexico	From: 05/01/14	To:	12/31/01
Station ID	294026	Location	Hobbs, New Mexico	From: 01/01/14	To:	12/31/01
Station ID	295617	Location	Melrose, New Mexico	From: 04/01/14	To:	12/31/01
Station ID	297008	Location	Portales, New Mexico	From: 01/01/14	To:	12/31/01
Station ID	298713	Location	Tatum, New Mexico	From: 06/01/19	To:	12/31/01

INFLUENCING WATER FEATURES

Narrative:

This site is not influenced by water from a wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

These are well drained, moderately deep to deep soils overlying calcic and petrocalcic layers. The surface textures are typically loamy fine sand with some fine sand. The textures of the subsurface layers which occur at depths of less than 20 inches, are sandy clay loam, fine sandy loam and loam. The depth to the petrocalcic layer ranges from 25 to 40 inches and the depth to the calcic layer ranges from 33 to 60 inches. Permeability is moderate to moderately rapid above the calcic layers. The available water-holding capacity is moderate. The effective rooting depth is about 40 inches. Moisture falling on this site is readily absorbed and permeates to the subsurface layers. Non-growing season moisture can be stored in the subsoil for earlier green-up o the mid-grasses and deeper-rooted forbs. Without protection by plant cover and organic residue, the surface soils become windblown and low hummocks are formed.

Parent Material Kind: Eolian Sands
Parent Material Origin: Sandstone-unspecified

Surface Texture:

1. Loamy fine sand
2. Fine sand
3.

Surface Texture Modifier:

1. N/A

Subsurface Texture Group: Loamy
Surface Fragments <=3" (% Cover): N/A
Surface Fragments >3" (% Cover): N/A
Subsurface Fragments <=3" (%Volume): 15 to 35
Subsurface Fragments >=3" (%Volume): N/A

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Very slow	Moderately rapid
Depth (inches):	20	>72
Electrical Conductivity (mmhos/cm):	0.00	2.00
Sodium Absorption Ratio:	0.00	5.00
Soil Reaction (1:1 Water):	6.6	8.4
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	6	12
Calcium Carbonate Equivalent (percent):	N/A	N/A

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label**: HCPC

Plant Community Narrative: Historic Climax Plant Community
The aspect of the potential natural plant community on this site is that of a mixed tall and mid-grass grassland dominated by little bluestem, Indian ricegrass, sideoats grama, sand bluestem and plains lovegrass. Small soapweed is evenly distributed throughout. Minor amounts of sand sagebrush, shinnery oak and southwest rabbitbrush are also present. An understory of short grasses and a variety of perennial forbs complete the well-stratified plant community, which fully utilizes the soil profile. During years of good winter precipitation followed by abundant spring and summer rainfall, annual forbs, such as annual wild buckwheat and sunflower, may thrive to the point of achieving aspect dominance. Perennial grass and forb and shrub components remain fairly constant in proportion to each other and fluctuate less drastically over longer-term moisture cycles.

Canopy Cover:	
Trees	0
Shrubs and half shrubs	2 – 5 %
Ground Cover (Aveage Percent of Surface Area).	
Grasses & Forbs	40 – 50
Bare ground	5 – 15
Surface gravel	0 – 3
Surface cobble and stone	0
Litter (percent)	35 – 45
Litter (average depth in cm.)	2 – 4

Plant Community Annual Production (by plant type):

Annual Production (lbs/ac)

Plant Type	Low	RV	High
Grass/Grasslike	900	1,388	1,875
Forb	156	241	325
Tree/Shrub/Vine	156	241	325
Lichen			
Moss			
Microbiotic Crusts			
Total	1,200	1,850	2,500

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	SCSC	Little Bluestem	463 – 555	463 – 555
2	ANHA	Sand Bluestem	93 – 185	93 – 185
3	BOCU	Sideoats Grama	185 – 278	185 – 278
4	ERIN	Plains Lovegrass	56 – 93	56 – 93
5	BOHI2	Hairy Grama	31 – 93	31 – 93
6	PASE5	Sand Paspalum	37 – 93	37 – 93
7	EKSE DICOA	Red Lovegrass Fall Witchgrass	37 – 93	37 – 93
8	ARIST	Threeawn spp.	56 – 93	56 – 93
9	SPCR SPFL2	Sand Dropseed Mesa Dropseed	56 – 93	56 – 93
10	2GRAM	Other Grasses	19 – 93	19 – 93

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	SPHAE PENST PSLA3	Globemallow spp. Penstemon spp. Lemon Scurfpea	56 – 184	56 – 184
12	BRASS PSCOE	Mustard spp. Paperflower	37 – 93	37 – 93
13	STSY AMPS GAVI2	Queensdelight Western Ragweed Woolly Beeblossom (gaura)	19 – 56	19 – 56
14	HEAN3 ERAN4	Annual Sunflower Annual Wildbuckwheat	19 – 93	19 – 93
15	2FORB	Other Forbs	19 – 93	19 – 93

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
16	YUGL	Small Soapweed Yucca	93 – 130	93 – 130
17	CHPU4	Southwest Rabbitbrush	19 – 37	19 – 37
18	ARFI2 QUHA3	Sand Sagebrush Shinnery Oak	0 – 93	0 – 93
19	GUSA2	Broom Snakeweed	19 – 56	19 – 56
20	2SD	Other Shrubs	19 – 56	19 – 56

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Other grasses that could appear on this site include: Indiangrass, Hall's panicum, spike dropseed, New Mexico feathergrass, Indian ricegrass, bottlebrush squirreltail, tumblegrass, windmillgrass, field sandbur, sixweeks grama, blue grama and black grama.
Other shrubs that could appear on this site include: pricklypear cactus, winterfat, ephedra, pale wolfberry, feather dalea, cholla cactus and mesquite.
Other forbs that could appear on this site include: dotted gayfeather, prairie coneflower, lemon beebalm, plains blackfoot, woolly dalea and verbena.

Plant Growth Curves

Growth Curve ID **5506NM**

Growth Curve Name: **HCPC**

Growth Curve Description: **Mixed tall and mid-grass grassland with minor components of forbs and shrubs.**

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	5	10	25	30	15	7	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, badger, swift fox, desert cottontail, spotted ground squirrel, plains pocket gopher, hispid pocket mouse, Ord's kangaroo rat, northern grasshopper mouse, southern plains woodrat, ferruginous hawk, lesser prairie chicken, scaled quail, mourning dove, horned lark, meadowlark, western box turtle, lesser earless lizard, round-tailed horned lizard, bullsnake, plains black-headed snake and western diamondback rattlesnake.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations	
Soil Series	**Hydrologic Group**
Amarillo	B
Arvana	C
Clovis	B
Douro	B
Faskin	B
Gomez	B
Jalmar	A
Spantara	B
Springer	B

Recreational Uses:

This site offers recreation potential for horseback riding, nature observation, photography, quail and dove hunting, antelope hunting and predator hunting. During years with abundant spring moisture and continuing moisture throughout the growing season, this site displays a colorful array of wildflowers from May through September.

Wood Products:

The natural potential plant community of this site affords little or no wood products.

Other Products:

Grazing:

This site is suitable for grazing during all seasons of the year. The site in itself lacks protective cover for livestock from winter storms. Because of the high component percentage of grasses the site is best suited to animals such as cattle which utilize grasses for a large percent of their diets. It could be suitable for minority proportions of sheep and goats. Grazing or browsing by goats might also be of value from a brush control standpoint where woody plants have increased considerably or invaded. In general, cattle grazing will result in a decrease in grasses and palatable forbs and an increase in woody plants. Sheep grazing will result in a decrease in perennial forbs and an increase in unpalatable grasses and woody plants. Grazing or browsing by goats results in a decrease in shrubs and half-shrubs and an increase in grasses. Grazing with cows in late May or early June during the flowering stage can control the spread of small soapweed. Continuous yearlong grazing, or grazing continually during the potential growing season will result in a decrease in the vigor and abundance of little bluestem, sideoats grama, sand bluestem and Indiangrass. A corresponding increase will occur in threeawn spp., dropseed spp., shinnery oak, sagebrush spp., and small soapweed, which will eventually dominate the site. This condition, coupled with an increase of exposed bare soil, severely impairs the grazing value of the site. Well planned systems of deferred grazing by domestic livestock, which vary the seasons of grazing and rest in pastures during successive years, will result in a balanced plant community, providing higher-quality forage and browse during all seasons of the year.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	**Ac/AUM**
100 - 76	2.0 – 2.7
75 – 51	2.6 – 4.0
50 – 26	4.1 – 6.9
25 – 0	6.9 +

Plant Part	Code	Species Preference	Code
Stems	S	None Selected	NS
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruits/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Plant Preference by Animal Kind:

Animal Kind: Livestock
Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	P	P	D	D	D
Sand Bluestem	Andropogon hallii	EP	D	D	D	P	P	P	P	P	P	D	D	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Sand Paspalum	Paspalum setaceum	EP	D	D	D	P	P	P	P	P	P	D	D	D
Globemallow	Sphaeralcea spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U
Penstemon	Penstemon spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U
Annual Sunflower	Helianthus annuum	EP	U	U	U	U	U	U	D	D	D	U	U	U

Animal Kind: Livestock
Animal Type: Goat

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Southwest Rabbitbrush	Chrysothammus pulchellus	L/S	D	D	U	U	U	U	U	U	U	U	D	D
Sand Sagebrush	Artemisia filifolia	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Shinnery Oak	Quercus havardii	L/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Penstemon	Penstemon spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U

Animal Kind: Livestock
Animal Type: Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Globemallow	Sphaeralcea spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U
Penstemon	Penstemon spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U
Lemon Scurfpea	Psoralidium lanceolatum	EP	U	U	U	D	D	D	D	D	D	U	U	U
Woolly Beeblossom	Gaura villosa	EP	U	U	U	D	D	D	D	D	D	U	U	U
Annual Sunflower	Helianthus annuum	EP	U	U	U	U	U	U	D	D	D	U	U	U
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Sand Paspalum	Paspalum setaceum	EP	D	D	D	P	P	P	P	P	P	D	D	D
Hairy Grama	Bouteloua hirsuta	EP	D	D	D	P	P	P	P	P	P	D	D	D

Animal Kind: Wildlife
Animal Type: Antelope

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Globemallow	Sphaeralcea spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U
Penstemon	Penstemon spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U
Paperflower	Psilostrophe cooperi	EP	U	U	U	D	D	D	D	D	D	U	U	U
Annual Sunflower	Helianthus annuum	EP	U	U	U	U	U	U	D	D	D	U	U	U
Annual Wildbuckwheat	Eriogonum annuum	EP	U	U	U	D	D	D	D	D	D	U	U	U
Broom Snakeweed	Gutierrezia sarothrae	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Sand Paspalum	Paspalum setaceum	EP	D	D	D	P	P	P	P	P	P	D	D	D

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites:

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: **New Mexico**

County: **Chaves, Curry, De Baca, Lea, Roosevelt**

Latitude:

Longitude:

Township:

Range:

Section:

Is the type locality sensitive? **Yes** ☐ **No** ☐

General Legal Description:

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern High Plains 77 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys : Lea, Roosevelt & Curry.

Characteristic Soils Are:	
Amarillo, Arvana, Clovis, Douro, Faskin	Gomez, Jalmar, Spantara, Springer
Other Soils included are:	

Site Description Approval:

{PRIVATE}Author	Date	Approval	Date
Don Sylvester	06/05/80	Don Sylvester	06/05/80

Site Description Revision:

{PRIVATE}Author	Date	Approval	Date
Elizabeth Wright	02/20/03	George Chavez	2/24/03